UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/693,231 | 10/23/2003 | Tomokazu Kake | 81659 [SC-70004US] | 1421 |

22242 7590 10/03/2006

FITCH EVEN TABIN AND FLANNERY
120 SOUTH LA SALLE STREET
SUITE 1600
CHICAGO, IL 60603-3406

| EXAMINER | |
|---|---|
| BROOME, SAID A | |
| ART UNIT | PAPER NUMBER |
| 2628 | |

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 10/693,231 | Applicant(s) KAKE ET AL. |
|---|---|---|
| | Examiner Said Broome | Art Unit 2628 |

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14, 17, 22, 24-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,14, 17,22,24-28 and 31-42* is/are rejected.

7)☒ Claim(s) *13,29 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-3 and 17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1 and 17 recite a method for generating an image, however no tangible result is produced. Therefore, the claimed invention does not posses "real world" value. The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had "no substantial practical application.").

Claim 42 is rejected under 35 U.S.C. 101 because the claim contains a recording medium, which is non-statutory subject matter because a program must be encoded on a computer readable medium for causing a computer to execute in order to be considered statutory subject matter. Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's

functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9, 14, 17, 22, 24-28, 31-36 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki (JP 09-035040).

Regarding claims 1 and 40, Seki teaches regarding original moving pictures as two-dimensional images that vary along time axis, and when the moving pictures are expressed, in a virtual manner, as a box space formed by the two-dimensional images and the time axis, cutting the box space by a surface that contains a plurality of points each of which differs from the other in time value in paragraph 0011 lines 5-9 ("*...there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Figure 3, that is, time-space image I(x, y; t). In step SP2, said time-space image I(x, y; t) is cut by a plane parallel to the time axis, and the image appearing on*

*the cut plane is taken as cross-sectional image…*"). Seki also teaches projecting an image that appears on the cut surface onto a plane in the direction of the time axis in paragraph 0011 lines 7-9 ("*…said time-space image I(x, y; t) is cut by a plane parallel to the time axis…*"), as shown in Figure 4. Though Seki does not explicitly teach outputting images appearing on the plane as new moving pictures, by varying the cut surface in time, it would have been obvious to one of ordinary skill in the art at the time of invention that several portions of the image frames gathered from their respective instances in time would generate new moving images because each image frame contributes to the image plane that is parallel to the time axis in regards to the description in paragraph 0012 lines 1-2 and 8-11 ("*…a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object…*"), and therefore it would have been obvious to one of ordinary skill in the art that a new image is generated on that plane comprised of the contributing moving frames, as shown in Figure 5. Seki also teaches an image generating method in Figure 1, as recited in the preamble of claim 1. Regarding the preamble of claim 40, Though Seki does not explicitly teach a program product embodied on a computer readable medium, it would have been obvious to one of ordinary skill in the art that the image processing used to generated the three-dimensional space described in paragraph 0011 lines 1-2 ("*…the consecutive images that are input to an image processor.*") and illustrated in Figure 4, is performed by execution of a software program, as recited in the preamble of claim 40.

Regarding claim 2, Seki teaches varying the cut surface in time is realized by moving the surface along the time axis in paragraph 0011 lines 7-9 ("...*said time-space image I(x, y; t) is cut by a plane parallel to the time axis*...") and in paragraph 0012 lines 1-2 and 8-11 ("...*an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object.*"), where it is described that the cut surface plane is parallel to the time axis, therefore movement along the cut surface would enable movement along the time axis.

Regarding claim 3, Seki teaches that the surface is defined by a function of coordinates of points contained in the two-dimensional images in paragraph 0011 lines 5-7 ("...*there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Figure 3, that is, time-space image I(x, y; t).*").

Regarding claim 4, Though Seki does not explicitly teach an image memory and image conversion unit, it would have been obvious to one of ordinary skill in the art that a memory is utilized to collect image data as images are acquired over a time period using the image pickpup means, as described in paragraph 0011 lines 1-2 ("*As shown in Figure 1, for example, a camcorder is used to take the consecutive images that are input to an image processor.*"), which is then sent to an image processor that performs the tasks of the image conversion unit and regards the moving pictures as two-dimensional images that vary along a time axis, as shown in Figure 4 . Seki teaches original moving pictures stored in an image memory, such as by an image pickup device, as two-dimensional images that vary along time axis and, when the moving pictures are expressed, in a virtual manner, as a box space formed by the two-dimensional images and the time axis, cuts the box space by a surface that contains a plurality of points each

of which differs from the other in time value, and which projects an image that appears on the cut surface onto a plane in the direction of time axis in paragraph 0011 lines 5-9 ("*...suppose there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Figure 3, that is, time-space image I(x, y; t). In step SP2, said time-space image I(x, y; t) is cut by a plane parallel to the time axis, and the image appearing on the cut plane is taken as cross-sectional image...*"). Though Seki does not explicitly teach an image data output, it would have been obvious to one of ordinary skill in the art at the time of invention that a display unit or device was used to produce the out image illustrated in Figure 4. Seki teaches a new moving-picture frame the images appearing on the plane obtained by varying the cut surface in time in said image conversion unit in paragraph 0006 lines 6-9 ("*...all of the consecutive images over a prescribed time are set side-by-side in time to form a three-dimensional time-space image; the time-space image formed in the aforementioned operation is cut by plural planes perpendicular to the original consecutive images...*"). Though Seki does not explicitly each an image generating apparatus, it would have been obvious to one of ordinary skill in the art that the image processor described in paragraph 0011 lines 1-2, that generates the image shown in Figure 4 is comprised in an image apparatus, as recited in the preamble of claim 4.

Regarding claim 5, Seki teaches an image conversion unit or image processor, that realizes varying the cut surface in time by moving the surface along the time axis in paragraph 0012 lines 8-11 ("*...an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object, that is, movement velocity and movement direction.*").

Regarding claim 6, Seki illustrates the surface defined in a manner such that the surface has continuous or discrete width the direction of the time axis in Figure 4. Seki teaches the image conversion, or processor, synthesizes images covered within the width in paragraph 0012 lines 1-2 and 8-11 ("*On said cross-sectional image C(d, t; θ), a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object…*"), where it is described that the trace image contains a synthesized image containing information from all the images along the time axis.

Regarding claim 7, Seki teaches an image conversion unit, or image processor, cuts the box space by a surface defined by a function of coordinates of an image region constituting the two-dimensional image in paragraph 0011 lines 5-7 ("*…there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Figure 3, that is, time-space image I(x, y; t).*").

Regarding claim 8, Seki teaches the surface is defined by a function which does not depend on a horizontal coordinate of the two-dimensional image in paragraph 0011 lines 5-9 ("*…suppose there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Figure 3, that is, time-space image I(x, y; t). In step SP2, said time-space image I(x, y; t) is cut by a plane parallel to the time axis…*"), where it is described that the cut surface is defined along the time axis, therefore the surface is defined along the t coordinate.

Regarding claim 9, Seki teaches the image conversion unit, or image processor, cuts the box space by a surface which is defined by a function of attribute values for an image region constituting the two-dimensional image in paragraph 0012 lines 1-2 and 6-11 ("*...a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace...This is called trace cross-sectional image L(s, θ; t), and it is found that this image becomes a place containing the velocity vector of the moving object...This plane completely contains the information pertaining to the movement of the object...*"), where it is described that the surface is defined by an attribute that represents the velocity of the movement of the object along the time axis.

Regarding claim 14, Seki teaches that a time value that defines the surface includes at least one of a past or a future with the present time being a center thereof in section 0006 lines 6-8 ("*...all of the consecutive images over a prescribed time are set side-by-side in time to form a three-dimensional time-space image; the time-space image formed in the aforementioned operation is cut by plural planes perpendicular to the original consecutive images...*"), where it is described that the surface is parallel to the time axis, therefore at any present time value the values analyzed from the left and to the right of that value are the past and future time values.

Regarding claims 17 and 42, Seki teaches reading out, for each in-picture position of an image contained in a target frame in original moving pictures, data that correspond to the in-picture position, from at least one of a plurality of frames contained in the original moving pictures in paragraph 0012 lines 1-2 and 6-11 ("*...a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace...This is called trace cross-sectional image L(s, θ; t), and it is found that this image becomes a place containing the*

*velocity vector of the moving object...This plane completely contains the information pertaining to the movement of the object...*"), where it is described that a certain region from all the frames is captured, as shown in Figure 4. Seki also teaches synthesizing the read-out data in a ratio according to an attribute value of the image contained in at least one of the plurality of frames in paragraph 0012 lines 1-2 and 8-11 ("*On said cross-sectional image C(d, t; θ), a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace...this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object...*"), where it is described that an attribute value, such as the proportional difference in the position of the object over time, is tracked and presented in a synthesized image that displays the movement of the object over a time interval, as shown in Figure 5. Seki illustrates forming new moving pictures by sequentially outputting frames formed in the synthesizing in Figure 5. Seki also teaches an image generating method in Figure 1, as recited in the preamble of claim 17. Though Seki does not explicitly teach a recording medium, it would have been obvious to one of ordinary skill in the art that the device used to capture the images, as described in paragraph 0011 lines 1-2 ("*...the consecutive images that are input to an image processor.*") and illustrated in Figure 4, stores a program to execute the image generation shown in Figure 4, as recited in the preamble of claim 42.

Regarding claims 22, 24 and 41, Seki teaches an image pickup device in paragraph 0011 lines 1-2 ("*As shown in Figure 1, for example, a camcorder is used to take the consecutive images that are input to an image processor.*"), therefore it would have been obvious to one of

ordinary skill in the art that the images are collected in an image memory. Seki also teaches sequentially recording, in sequence, original moving pictures for each frame, where the image conversion unit, or image processor, determines for each in-picture position of an image contained in a target frame in paragraph 0012 lines 1-2 and 8-11 ("*On said cross-sectional image $C(d, t; \theta)$, a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace...this trace cross-sectional image $L(s, \theta; t)$ is an image obtained by cutting said time-space image $I(x, y; t)$ with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object...*"), where it is described that for the successive frames, the position of an object in image is tracked, as shown in Figure 4. Seki also teaches that the image conversion unit, or image processor, determines a plurality of frames at predetermined time intervals from the frames recorded in the image memory in paragraph 0013 lines 1-2 ("*...all of the consecutive images within a prescribed time are obtained beforehand.*"), where it is describe d that fames are captured over a predetermined time interval, therefore the time intervals between the frames is predetermined such as illustrated in Figure 2. Seki also teaches from the plurality of frames, data that corresponds to the in-picture position and synthesizes the data in a ratio according to an attribute value in paragraph 0012 lines 1-2 and 6-11 ("*...a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace...This is called trace cross-sectional image $L(s, \theta; t)$, and it is found that this image becomes a place containing the velocity vector of the moving object...This plane completely contains the information pertaining to the movement of the object...*"), where it is described that a certain region from all the frames is captured, as shown in Figure 4. Seki also teaches synthesizing the read-out data in a ratio

according to an attribute value of the image contained in at least one of the plurality of frames in paragraph 0012 lines 1-2 and 8-11 ("*On said cross-sectional image C(d, t; θ), a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object. This plane completely contains the information pertaining to the movement of the object…*"), where it is described that an attribute value, such as the proportional difference in the position of the object over time, is tracked and presented in a synthesized image that displays the movement of the object over a time interval, as shown in Figure 5. Seki illustrates sequentially outputting the synthesized and reconstructed image data in Figure 5. Though Seki does not explicitly each an image generating apparatus, it would have been obvious to one of ordinary skill in the art that the image processor described in paragraph 0011 lines 1-2, that generates the image shown in Figure 4 is comprised in an image apparatus that captures and displays image output, as recited in the preamble of claims 22 and 24. Though Seki does not explicitly teach a recording medium, it would have been obvious to one of ordinary skill in the art that the device used to capture the images, as described in paragraph 0011 lines 1-2 ("*…the consecutive images that are input to an image processor.*") and illustrated in Figure 4, stores a program to execute the image generation shown in Figure 4, as recited in the preamble of claim 41.

Regarding claim 25, Seki teaches that the target frame or at least one of frames is at least one of a previous frame in time or a subsequent frame in time with respect to a reference frame which should have been naturally outputted by said image data output unit from said image memory in paragraph 0006 lines 6-7 ("*…all of the consecutive images over a prescribed time*

*are set side-by-side in time to form a three-dimensional time-space image...*"), where it is described that the frames are successively located along a time axis, therefore a particular frame that is presently analyzed would have a frame from the past in reference to a current frame.

Regarding claim 26, Seki teaches that for each in-picture position of the images contained din the target frame, the image conversion unit or processor adds a predetermined pixel value in accordance with an attribute value thereof in paragraph 0016 lines 3-7 ("*...cutting of the initial time-space image is performed in all directions...the cutting plane is made of a helix plane along the movement trace of the object, and this plane completely contains the movement vector of the object, and it contains all of the information about the movement trace.*"), where it is described that a predetermined cut is performed on the surface containing a position, or pixel value, within the frames to track the movement of the object in accordance with an attribute value, such as the specified time interval of the frames, as described in paragraph 0011 lines 1-5 ("*...a camcorder is used to take the consecutive images...as the images at an instant (11, 12, 13) shown in Figure 2 are represented as I(x, y) with the orthogonal coordinates of X-axis and Y-axis, all of the images obtained are set side-by-side in time sequence.*").

Regarding claims 27 and 28, Seki teaches an attribute or depth value, t, in paragraph 0011 lines 5-7 ("*...there is a time axis (T-axis) perpendicular to both X-axis and Y-axis, by setting the images along this axis, it is possible to construct the three-dimensional image shown in Figure 3, that is, time-space image I(x, y; t).*"), as shown in Figure 3.

Regarding claims 31 and 32, Seki teaches an attribute value or movement vector value that indicates a degree of change of an image area in time in paragraph 0016 lines 3-7 ("*...cutting of the initial time-space image is performed in all directions...the cutting plane is*

*made of a helix plane along the movement trace of the object, and this plane completely contains the movement vector of the object, and it contains all of the information about the movement trace.*").

Regarding claims 33 and 34, Seki teaches an attribute value that is a pixel value in paragraph 0012 lines 1-2 ("...*a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace...only the portion containing angle* $\theta_d$ *is extracted from each cross-sectional image* $C(d, t; \theta)$, *and a new image is formed.*"), where it is described that the position of the pixel with the image frame is tracked over a time interval.

Regarding claims 35 and 36, Though Seki does not explicitly teach an image memory, it would have been obvious to one of ordinary skill in the art that an image pickup device, such as a camera or camcorder as described in 0011 lines 1-2 ("...*a camcorder is used to take the consecutive images that are input to an image processor.*"), contains an image memory for capturing images.

Claims 10-12 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki in view of Fels et al.(herein "Fels", "*Techniques for Interactive Video Cubism*").

Regarding claims 10 and 37, Seki fails to teach the limitations. Though Fels does not explicitly teach a setting input unit and image conversion unit, it would have been obvious to one of ordinary skill in the art at the time of invention that the input capabilities provided to the user have a corresponding input unit, as well as an image conversion unit to process the images displayed in Figures 1-4. Fels teaches input acquired via a user operation, used to define the surface, where the image conversion unit cuts the box space by the surface defined by a function

of the setting value acquired by the setting input unit in section 3.3.1 lines 1-2 ("*The cut plane allows the user to move a planar window inside the video cube and examine the corresponding imagery…*"), where it is described that the three-dimensional surface is cut by a plane, as shown in Figure 3, therefore it is obvious that the processed images displayed in Figures 1-4 were obtained using an image conversion unit. It would have been obvious to one of ordinary skill in the art to combine the teachings of Seki with Fels because this combination would provide the ability to accurately display successive frames of animation or video collectively in a three-dimensional format in which the user may interactive with the data to define a plane by which to cut the surface of the data to define a representation of the change of the images or frames over a time interval thereby enabling temporal analysis of the data.

Regarding claims 11 and 38, Seki teaches a curve that indicates a relation between coordinates of points contained in the two-dimensional images and time values thereof and a variable of the function is displayed on a screen in paragraph 0012 lines 1-11 ("*On said cross-sectional image C(d, t; θ), a portion of the image of moving object (21) contained in the original consecutive images must appear as the trace…the object trace on said cross-sectional image C(d, t; θ) at a certain time is determined…This is called trace cross-sectional image L(s, θ; t), and it is found that this image becomes a place containing the velocity vector of the moving object…this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object.*"), as shown in Figure 5. However, Seki fails to teach a setting input unit and a setting value. Though Fels does not explicitly teach a setting input unit, it would have been obvious to one of ordinary skill in the art at the time of invention that the input capabilities provided to the user have a

corresponding input unit, therefore the input described in section 3.3.1 lines 1-2 has a corresponding input unit to provide a value that is used to define the cut surface, as shown in Figure 4. The motivation to combine the teachings of Seki with Fels is equivalent to the motivation of claim 10.

Regarding claims 12 and 39, Seki teaches that based on coordinates of characteristic points in the two-dimensional images, the image conversion unit, or image processor, cuts the box space by a curve defined by a function of the coordinates of the characteristics points in paragraph 0012 lines 1-1 ("*This is called trace cross-sectional image L(s, θ; t), and it is found that this image becomes a place containing the velocity vector of the moving object. That is, this trace cross-sectional image L(s, θ; t) is an image obtained by cutting said time-space image I(x, y; t) with a helix plane along the movement direction of the object* "), and as shown in Figure 5. However, Seki fails to teach a setting input unit and a setting value. Though Fels does not explicitly teach a setting input unit, it would have been obvious to one of ordinary skill in the art at the time of invention that the input capabilities provided to the user have a corresponding input unit, therefore the input described in section 3.3.1 lines 1-2 has a corresponding input unit to provide a value that is used to define a certain portion of the cut surface, as shown in Figure 4. The motivation to combine the teachings of Seki with Fels is equivalent to the motivation of claim 10.

### *Claim Objections*

Claims 13, 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Said Broome whose telephone number is (571)272-2931. The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S. Broome SB
9/20/06

ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER